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RECENT PUBLIC HEALTH WORKS.

A Treatise on Hygiene and Public Health. By T. Stephenson, M.D., F.R.C.P., and Shirley F. Murphy. Vol. ii. (London: J. and A. Churchill, 1893.)

Public Health and Demography. By Edward F. Willoughby, M.D., D.P.H. (Macmillan and Co., 1893.)

Methods of Practical Hygiene. By Prof. K. B. Lehmann. Translated by W. Crookes, F.R.S. In two vols. (London: Kegan Paul, Trench, Trübner, and Co., Limited, 1893.)

IN our review of vol. i. of the "Treatise on Hygiene and Public Health," it was pointed out that the various articles comprising it were written by men whose knowledge and experience upon the subjects allotted to them for treatment was a sufficient guarantee of good work, and that any faults that the reviewer might possibly detect in the volume must almost of necessity be those of omission. To this second volume—which contains matter of the greatest possible interest and importance to the student and practitioner of preventive medicine—the same remarks apply. It is at least equal in all-round excellence to vol. i.; but here and there a few points might, in our opinion, have been more fully dealt with than they are, especially in a book which is destined to become essentially the work of reference for those interested in public health matters.

Article 1 treats of "The Pathology of Infectious Disease," and is written by Dr. Klein. This is an excellent *résumé* of what is undoubtedly the most important branch of preventive medicine, and it forms one of the best features of the book. No one can question the authoritative value of an article coming from such a source; and the fact that it is well written, and the various stages of the study are carefully arranged and treated of in admirable sequence, make this difficult subject both easy and pleasant reading. Appended to the article is a wealth of illustrations, comprising plates of a large number of cover-glass specimens of cultures of the different bacilli, all beautifully clear, and many coloured to show the characteristic staining of bacilli and fungi in tissues and fluids; sections through pathological tissues, &c.; specimens of blood, mucus flakes and pus, showing bacilli; representations of a large number of tube cultures—streak, stab, shake, and surface; cultures on potato, and plate cultures. We fancy that a few illustrations of the apparatus employed in bacteriological research would be acceptable, and we note that no mention is made of Haffkine's work in anti-choleraic vaccination; this might certainly have been included, notwithstanding the circumstance that a valuable piece of destructive criticism, emanating from Dr. Klein, has thrown considerable doubt upon the value of the method.

The article which very appropriately follows upon the first is contributed by Dr. T. W. Thompson, upon the subject of "The Natural History of Infectious Diseases"; it is a careful and well-written article, leaving but little to be desired. The subject of the communicability of phthisis is, however, worthy of a little more space than that allotted to it, more especially as during the past two years a conviction has established itself among health officers that there is at present an enormous amount of preventible mortality from that disease, by reason of the fact that the malady is frequently traceable to infection from a pre-existing case; and there is every prospect, in the near future, of phthisis being brought more directly under the control of preventive measures.

Article 3, by Dr. J. C. McVail, gives an excellent summary of the work that has resulted in our present system of vaccination, and deals fully enough with the subject of anti-vaccination. The article contains many useful diagrammatic expressions of the deaths from small-pox, and the general incidence, age and sex incidence, types, &c. of the disease among both the vaccinated and the unvaccinated.

The subject of vital statistics has been entrusted to Dr. Ransome for treatment. It is, of course, a good article, but rather short, and hardly explanatory enough in some respects for the purpose of those who will doubtless consult the volume upon points which they have either not been able to understand or to gather from the perusal of the smaller works upon public health.

The main scope of Article 5 is the hygiene of those who live at sea, in ships as their houses, and with the sea and air as their environments. It is appropriate, therefore, that under the heading of "Marine Hygiene" the writer should treat of sea-water in its chemical and physical aspects; the various kinds of ships, and the material used in their construction; shipping and passenger statistics; the cubic space, ventilation, and temperature of cabins and bunks; the water supply of ships; and the sailor, his food and its preservation, his clothing, and the diseases to which he is especially subject. The best feature, and the most useful, of this admirable article is that bearing upon port sanitation, and Dr. H. E. Armstrong is to be congratulated upon a careful and valuable contribution.

The sixth article, upon military hygiene, is by Prof. J. L. Notter. It is substantially that which appears in the same writer's edition of Edmund Parke's work upon practical hygiene. It is well written and sufficiently exhaustive.

The article which deals with disposal of the dead consists of two parts. Part i. is contributed by Sir T. Spencer Wells, and treats of the various methods employed by different sects and nationalities. It is admirably written, extremely interesting, and is a powerful vindication of cremation. The second part is written by Mr. Frederick Walter Lowndes, who, while he discusses the question in a spirit of impartiality, maintains that there need be no difficulties and dangers in the prevailing method of disposing of the dead, if proper care be exercised in the selection of the site of the burial-ground and its subsequent management.

The volume is concluded by an excellent article upon the medical officer of health, by Dr. Ashby; and we are glad to find the writer advocating whole time service, though deprecating the altogether inadequate emoluments which are offered in return. This will be found one of the most valuable contributions in the whole volume for those who, having secured an appointment as medical officer of health, wish to have brought before them the whole requirements, duties, and routine work appertaining to that office.

All those interested in public health can but be grateful for the opportunity, which this valuable and well-bound volume affords, of gaining an excellent and reliable knowledge of the many subjects which it embraces.

The second volume, of which the title is given at the head of this notice, is a third edition, considerably enlarged and improved, of the "Principles of Hygiene,"—a small handbook written by Dr. Willoughby, for the special use of the students of hygiene in the Science and Art Department, South Kensington.

The author very justly infers that with a material increase in its bulk, the scope of its utility has been extended, and that it will now meet the requirements of the medical man, the student, and the teacher. We do not, however, quite agree with the author in his assertion that the contents will be found almost if not quite sufficient for most examinations in public health. The book undoubtedly deals fully enough with the *principles* of hygiene, but the student for diplomas in public health will find it necessary to consult other works upon special subjects—such as Water, Air, and Food Analysis, Offensive Trades, and Sanitary Legislation. We do not wish it to be inferred, however, that Dr. Willoughby's book is inferior in any way to most of the other small manuals dealing with the same subject, neither of which is sufficient in itself to meet the requirements of those seeking public health diplomas. The present volume is well adapted to rank with others of its kind as a very useful manual, and its appearance adds to the difficulty which teachers already experience of concluding as to which is the best all-round book for students bent upon securing a degree in hygiene. This difficulty experienced by teachers arises from the fact that all such manuals are, of necessity from their small bulk, somewhat unequal; in all it is easy to lay one's finger upon some important points which are dismissed far too cursorily. The present volume is no exception in this respect; the chapters on food, school hygiene, and demography are excellent, and probably the best that have yet found their way into any of the smaller public health publications; but, on the other hand, there is practically nothing about offensive trades, with reference to the nature and source of the various nuisances which each gives rise to, and the means by which these can be abated; the subject of the collection, storage, and distribution of water for town supplies might be amplified with advantage; and if it is necessary to introduce the examination of air, surely its importance justifies the author in giving at least two full pages to it.

The manual suffers somewhat from a dearth of illustrations; these are prized highly by the student who comes green to the subject, and Dr. Willoughby would have done well to give more than thirty-nine illustrations in his manual of nearly 500 pages.

In the preface the author writes: "Some of my statements, especially as to cholera, diphtheria, and the influence of small-pox hospitals, may appear somewhat dogmatic and opposed to traditional teaching." But we do not think that the bulk of sanitarians will differ from Dr. Willoughby in the views which he holds upon either of these subjects, and we commend his opposition to traditional teaching when this teaching is not in accordance with more recently acquired knowledge. The work is for the most part very well done, and those interested in the study of public health matters will do well to read it.

Mr. Crookes can be congratulated in so far as he has well translated a work which serves to give us an insight into the German methods of practical hygiene. These methods are for the most part similar to those in vogue in this country, but in many important respects we differ from our neighbours; and it is mainly on this account that the work will not become the text-book for English students of practical hygiene, valuable as it undoubtedly must be to German students.

The book is characterised by what appears to be almost a studied ostracism of everything British. The methods selected and advocated are almost exclusively German, and with very rare exceptions (possibly half a dozen in the two volumes) continental views and opinions are alone given.

In view of the fact that in the preface the author writes: "Thus I hand over my book to the nation which has taken the lead of all modern civilised peoples in the sphere of practical hygiene," it is strange that he should have so persistently ignored everything English in the work. Surely in water-analysis we might reasonably expect to find some mention made of Wanklyn's, Frankland's, or Tidy's processes; and a perusal of the section upon the hygienic examination of dwelling-houses discloses several discrepancies which exist between English and German views on house sanitation Such a sentence, for instance, as "The overflow pipes of cisterns should not open into the soil-pipe of a w.c. without the intervention of a siphon," would certainly not find its way into our sanitary literature. The use throughout the work of the term "typhus" for "typhoid" or "enteric," and the fact that the "degrees" of hardness are always *German* degrees, will certainly create a little confusion among English readers; and here and there are instances where the information is either imperfect or misleading when viewed from the English standpoint. One such instance has already been given, and we now furnish a few others:—

The author writes: "The danger of chronic poisoning by drinking water has probably never existed." He estimates the ammonia by adding the Nessler reagent to the original water, and does not appear to attach sufficient importance to its presence; the indigo process is the only one given for estimating the nitric acid in water; the organic matter in water is alone determined by the amount of oxygen which it will consume, according to Kubel-Tiemann. The microscopical examination of foreign matter in water occupies about a page, and no illustrations are given save of the ova of the more common intestinal parasites. Organic matter in the air is dealt with very cursorily and unsatisfactorily, and the only means of estimating it is by the oxygen which it will absorb from permanganate, which, the writer is at pains to point out, suffers from grave defects. The microscopical characters of the different starch grains are treated in a very poor and insufficient manner. The tract of the ether vapours in the Soxhlet apparatus is wrongly described, and the treatment of the subject of soil examination is crude.

Although it is not difficult to thus indicate many points with which a critic in this country may find fault, the work may with profit be consulted on many subjects, and none with greater advantage than that of Food.

The book is capitally printed and bound in two handy-sized volumes.

THE LATEST TEXT-BOOK OF GEOLOGY.

Text-Book of Geology. By Sir Archibald Geikie, Director-General of the Geological Survey of Great Britain and Ireland. Third Edition, revised and enlarged. (London: Macmillan and Co., 1893.)

IT goes very much against the grain, for it savours of ingratitude, to begin by picking holes in a book that has been a trusted companion, that has proved itself worthy of trust, and to which I have been so largely indebted, as the volume before me. But the strictures I feel bound to make are not very severe, and the blots I cannot help noticing do not impair seriously the value of the work—do not, indeed, detract at all from its usefulness in the case of a large number of readers.

The first point on which I have always differed from the author is this. In Book i., which deals with the cosmical aspects of geology, we are introduced to some of the darkest and most unsettled problems that arise when we concern ourselves with the earth's history; the stability of its axis, the degree of its rigidity, the causes of the changes of climate which have occurred in bygone days. Besides their obscurity these points have not a little in common, and much may be said in favour of grouping them together. But when we find it stated in the preface that the method of treatment adopted is one which the author has found, while conducting his geological class, to afford the student a good grasp of the general principles of the science, it is hardly possible to avoid doubting the wisdom of bringing them in at so early a stage. To do this is to run counter to that prime canon of teaching, which bids us start with the concrete, simple, and known, and lead thence up to the abstract, complex, and hypothetical. To the advanced student, who has already made the acquaintance of these unsettled points, such a summary as we have here of what has been done towards their solution is most valuable; but it is rather strong meat for the beginner. On just the same grounds I would object to putting in the forefront speculations as to the state of the earth's interior or her age. Something may be said in favour of an early notice of the nebular hypothesis, for it looks like beginning at the beginning. But to do this successfully we must have some certain knowledge of what the beginning was, and this we assuredly have not in the case of the earth. So greatly do I differ from the author's view as expressed in the preface that I always recommend students to omit large portions of Books i. and ii. on their first reading. In the same connection one may note that, on the principle that the father comes before the children, hypogene action precedes epigene action in Book iii. But on grounds already stated, I should be inclined to reverse the order.

Further, while all that style could do to render the work attractive has been done, I have found that the arrangement of its matter tends to render it at times rather hard reading. It is somewhat irritating, when you have begun to grow warm on some subject and want to know everything that is known about it, to be told that no more can be said here, but that some information has been given in a previous book, and that the subject is further discussed in a subsequent book. It is no great hardship to have to turn backwards or forwards, though a little hunting may be required to find the exact passage sought; yet these cross references do act as a check on the even flow of one's thought, and they occur pretty frequently. A little more elasticity and a little less consistency may be desiderated. Take the case of metamorphism. In Book ii. part 7, section iii. we have a description of the chief varieties of metamorphic rocks; then, under the head of Dynamical Geology, in Book iii., instances of the changes produced by metamorphism; lastly, in Book iv., which treats of the architecture of the earth's crust, we are told of some additional metamorphic changes and of the processes by which metamorphism is brought about. It is difficult to see why the last two sections should have been so widely separated for the process of metamorphism, specially of regional metamorphism, is a dynamical operation. It would have been a convenience and would have saved some repetition, to have had all these sections in continuous sequence; and it is instructive to notice how impossible is rigid adherence to systematic arrangement, for even in the descriptive section there are constant anticipations of the dynamical problems which are treated more fully later on.

There are other cases in which, for a similar reason, it will be found troublesome to gather into a connected whole all that the book has to tell on a specific subject; but the trouble will be well repaid, for it is a book almost exhaustive in its fulness, copiously illustrated, lucid in its descriptions, and a model of English in style. As an illustration of its thoroughly practical character, we may point to the minute directions on the subject of fossil-collecting at the end of Book v. On some of the more recondite and obscure problems of geology, the author has wisely refrained from attempting to decide between rival hypotheses; but he has summarised the more important speculative solutions that have been put forward, and has given such full references to the papers in which these appear, that the reader, who is so minded, can easily follow out the questions for himself. Indeed, throughout what may be called the physical side of geology, the book is a most exhaustive and trustworthy compendium, such as could be produced only by one who has a wide acquaintance with the literature of the subject, and who has also been brought face to face with what he describes by life-long and varied work in the field.

When we come to stratigraphical geology, it behoves the critic to be wary in his judgments. To treat this satisfactorily seems to me to be the most trying ordeal to which the writer of a text-book can be subjected. At the very threshold we are met with one of the most perplexing of geological problems, when we are called upon to decide between the rival claims of contemporaneity and homotaxis. The subject is discussed at some length by